REMARKS/ARGUMENTS

Claims 1-40 remain pending in the present application. No new matter has been added herein.

CLAIM REJECTIONS

Rejection under 35 U.S.C. §102(e)

Claims 1-9, 15-33, and 39-40 are rejected under 35 U.S.C. §102(e) as being anticipated by Boulanger et al., Patent No. 6,583,808 (hereinafter, Boulanger). The rejection is respectfully traversed for the reasons below. Independent claim 1 recites:

> A method for clustering data in a virtual environment, comprising:
> determining a cluster of receiving nodes in said virtual environment, wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test;
> generating a common data stream based on said at least one clustering parameter; and
> sending said common data stream from a sending node to said cluster of receiving nodes.

Independent Claim 1 recites in part "determining a cluster of receiving nodes in said virtual environment, wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test", and "generating a common data stream based on said at least one clustering parameter". **Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.** *Lindemann Maschinefabrik GmbH v. American Hoist & Derrick Co.*, 221USPQ 481, 485 (Fed. Cir. 1984). Applicants respectfully submit that Boulanger fails to disclose each and every element of claim 1, arranged as in the claim.

Specifically, Boulanger fails to teach or suggest "determining a cluster of receiving nodes in said virtual environment, wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test". In contrast, Boulanger purports to teach a method for stereo videoconferencing that can provide an immersive three-dimensional experience to permit meeting participants to interact with each other in a realistic way, while avoiding the computationally intensive process of computing participants' images using three-dimensional models. Boulanger, column 1, lines 66-67 – column 2, lines 1-4. Boulanger is concerned with transmitting stereo pairs of video images of each participant to each of the other participants. Stereo pairs refer to video images created by a system transformed by respective video image pairs due to the implementation of this invention. Boulanger, col. 4, lines 64-66.

The Examiner cites Boulanger's column 1, line 65 to column 2, line 4, and column 2, lines 7-25 as disclosing "wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test". However, nowhere in column 1, line 65 to column 2, line 4, and column 2, lines 7-25 is there a mention or suggestion of a "clustering parameter" as found in Applicants' invention. Instead, Boulanger in column 4, lines 64-66 explains an implementation of Boulanger's invention of providing a method for stereo videoconferencing that provides a realistic immersive three-dimensional environment for participants. Boulanger, column 2, lines 7-9.

> The system determines, using data from position sensors 230 (FIG. 2) or image analysis, the positions of the participants 102a, 102b, and computes the cameras (208a and 210a in this example) that most closely approximate a view of participant 102a from the perspective of participant 102b. The system then selects those two cameras to supply video images of the participant 102a to the participant 102b, so long as a position of the two participants 102a, 102b remains relatively the same. The system similarly selects cameras 208b and 210b to supply video images of participant 102b to the participant 102a. The system then separates the image of each participant 102a, 102b from the background that appears in the respective video images. This can be done using any one of several techniques well known to persons skilled in the art, such as pixel extraction using a background mask.

Boulanger remains silent as to a clustering parameter. Boulanger avoids the computationally intensive process of computing participants' images using three-dimensional models by the creation of stereo video images for each participant. Whereas Applicants' invention provides clustering parameters allowing for the generation of a common data stream to reduce computational processing and communication traffic. Boulanger sends video pairs to each receiving node based upon each receiving node's perspective. Applicants' invention sends a common data stream to a cluster of receiving nodes. There is no mention or inference in the Examiner's referenced citations of a clustering parameter allowing for the generation of a common data stream.

Furthermore, Boulanger fails to disclose Applicants' concept of a cluster of receiving nodes being in such close proximity so as to, as a set, satisfy a test as be within a 'clustering parameter', and then based upon this clustering parameter, a common data stream sent from a sending node to a cluster of receiving nodes. Boulanger merely discloses a method of concentrating on individual participants separately, and creating stereo pairs of video images of each participant to send to other participants.

Boulanger fails to teach or suggest "determining a cluster of receiving nodes in said virtual environment, wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test". In contrast, Boulanger teaches the creation of video pairs of video images of each participant, instead of creating a dynamic 3D model of the participants. Boulanger focuses upon computing the cameras that most closely approximate a view of one participant from another to create video images. These video images are used to create a stereo pair for each participant. In contrast, Applicants' invention focuses upon a cluster or receiving nodes having associated values for at least one clustering parameter that as a set satisfies a test. Column 4, lines 48-67. The clustering parameter determines the common data stream that is sent to a receiving node, and as such the data streams are user dependent. Applicants' specification, page 12, lines 1-5. Thus, Boulanger fails to teach or suggest "determining a cluster of receiving nodes in said virtual environment, wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test", as claimed.

For the foregoing rationale, Claim 1 is not anticipated by Boulanger. As such, allowance of Claim 1 is respectfully solicited.

Independent Claim 16 recites:

A system for clustering data in a virtual environment, comprising:
a clustering module for determining a cluster of receiving nodes in said virtual environment, wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test;
a data generator for generating a common data stream based on said at least one clustering parameter; and
a transmitter for sending said common data stream from a sending node to said cluster of receiving nodes.

Independent Claim 16 recites similar limitations as independent Claim 1. For the reasons discussed in the response to Claim 1, Claim 16 is not anticipated by Boulanger.

Independent Claim 23 recites:

A method for clustering data, comprising:
determining a cluster of receiving nodes among a plurality of receiving nodes, wherein a plurality of varying data streams are generated by a sending node for all of said plurality of receiving nodes depending on an associated value of a parameter for all of said plurality of receiving nodes, and wherein each of said cluster of receiving nodes have associated values for said parameter that as a set satisfies a test such that data streams associated with said cluster of receiving nodes are substantially similar;
generating a common data stream of a sending object associated with said sending node based on a representative value of said parameter; and
sending said common data stream to said cluster of receiving nodes.

Independent Claim 23 recites similar limitations as independent Claim 1. For the reasons discussed in the response to Claim 1, Claim 23 is not anticipated by Boulanger.

Independent Claim 25 recites:

A computer readable medium containing executable instructions which, when executed in a processing system, causes the system to perform the steps for clustering data in a virtual environment, comprising:

determining a cluster of receiving nodes in said virtual environment, wherein each of said cluster of receiving nodes have associated values for at least one clustering parameter that as a set satisfies a test;

generating a common data stream based on said at least one clustering parameter; and

sending said common data stream from a sending node to said cluster of receiving nodes.

Independent Claim 25 recites similar limitations as independent Claim 1. For the reasons discussed in the response to Claim 1, Claim 25 is not anticipated by Boulanger.

Independent Claim 40 recites:

A computer system comprising:

a processor; and

a computer readable memory coupled to said processor and containing program instructions that, when executed, implements a method for clustering data, comprising:

determining a cluster of receiving nodes among a plurality of receiving nodes, wherein a plurality of varying data streams are generated by a sending node for all of said plurality of receiving nodes depending on an associated value of a parameter for all of said plurality of receiving nodes, and wherein each of said cluster of receiving nodes have associated values for said parameter that as a set satisfies a test such that data streams associated with said cluster of receiving nodes are substantially similar;

generating a common data stream of a sending object associated with said sending node based on a representative value of said parameter; and

sending said common data stream to said cluster of receiving nodes.

Independent Claim 40 recites similar limitations as independent Claim 1. For the reasons discussed in the response to Claim 1, Claim 40 is not anticipated by Boulanger.

Claims 2-9 and 15, 17-22, 24, 26-33 and 39 depend from Claims 1, 16, 23, 25, and 40 respectively which are believed to be allowable for the foregoing reasons. As such, Claims 2-9 and 15, 17-22, 24, 26-33 and 39 are believed to be allowable and their allowance is earnestly solicited.

Rejection under 35 U.S.C. §103(a)

Claims 10-14, and 34-38 are rejected under 35 U.S.C. §103(a) as being unpatentable over Boulanger in view of Elbaz et al, U.S. Patent No. 6, 757,005 (hereinafter, Elbaz). The Applicants have reviewed the cited references and respectfully submit that the present invention as recited in Claims 10-14 and 34-38 are not rendered obvious over Boulanger in view of Elbaz.

Applicants respectfully submit for the reasons state above and not repeated for purposes of brevity and clarity, that Independent Claims 1, 16, 23, 25, and 40 are allowable. Applicants respectfully point out that Claims 10-14 depending from independent Claim 1, and Claims 34-38 depending from independent Claim 25 are in condition for allowance as being dependent on an allowable base claims.

CONCLUSION

In light of the above-listed remarks and amendments, reconsideration of the rejected claims is requested. Based on the amendments and arguments presented above, it is respectfully submitted that Claims 1-40 overcome the rejections of record. Therefore, allowance of Claims 1-40 is respectfully solicited.

The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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